

REMARKS:

Claims 39-56 are in the case and presented for consideration.

Please consider the Second Substitute Specification and new set of claims for examination.

The Examiner has objected to the specification for failing to provide a full clear and concise explanation of the invention. The specification has been revised fully to try and satisfy the Examiner's requirements.

The second substitute specification, which is attached, as well as a marked up copy of the first substitute specification is provided to demonstrate that no new matter has been added to this application.

A paragraph has been added on page 7 to explain that the AISI and DIN references, as well as other initials, refer to various known standards.

The Examiner has also objected to the comment that page 10 concerning the aluminum and titanium percentages. Attached to this amendment also please find a copy of Fig. 2, which has been annotated and provided as Exhibit A. It is noted that the old Substitute Specification at page 10, and the new Second Substitute Specification at page 11, correctly characterize Fig. 2. Please note that the initial fall in aluminum content from 50 to 40%, from points 1 to 3 in Exhibit A and the initial rise of titanium from points 1 to 2 in Exhibit A, refer to the "active edge region", as opposed to the line representing the edge itself. The edge region would be understood to be on both sides of the point marked "Edge"

in Figure 2 and would encompass point 1 where both titanium and aluminum are at 50% and points 2 and 3 where titanium is at 60% and aluminum is at 40%, respectively.

The Examiner has also indicated that the various "trademarks" should always be capitalized. It is noted that rather than trademarks, these are actually industry standards for various metals. The specification is believed fully correct with regard to using these terms and to avoid any confusion or further concern regarding usage of these symbols, the dependent claims specifically referring to these symbols have been cancelled from the application.

The Examiner has objected to Claims 19, 37 and 38 for certain inaccuracies.

New Claim 39 has been carefully drafted to properly define the method.

For the Examiner's better understanding, it is noted that the method is for producing a plurality of cutting tools wherein at least a first one of the tools has one set of characteristics for its hard metal coating, and at least a second one of the tools has a different characteristic. The first characteristic provides for a higher adhesive strength than hardness, and the second characteristic provides for a higher hardness than adhesive strength. As fully disclosed in the specification, one of these characteristics is better suited to high speed tools and the other is better suited to low speed tools.

The inventors have found that to satisfy one set of requirements, the composition of the coating which contains at least two metals from a selected group, should vary by more than a threshold amount (2%) and to achieve the other characteristic, the same two metals should be maintained at the same concentration (again, with the 2% threshold). Either changing the concentration or keeping it the same occurs between the active cutting edge of the tool and points on the tool away from that edge.

Nowhere in the prior art is this concept found or rendered obvious and nowhere in the prior art is a method provided for taking advantage of this discovery.

Returning once more to the Office Action, the Examiner has also rejected Claims 19-28 as being indefinite under 35 U.S.C. 112 for using relative terms such as "hard" and "strength".

All of the terms utilized in the claims are clearly defined with regard to their scope, in the specification. Specific materials are provided for the hard material coating which would of course have specific hardness characteristics. They would also have specific relative attributes of adhesion and hardness, which is also clearly supported in the specification. Where the specification provides some standard for measuring the degree, such terms of degree (e.g., "hard") may be used in claims. See *Seattle Box Company, Inc. v. Industrial Crating and Packing, Inc.*, 731 F.2d 818, 221 U.S.P.Q. 563, 574 (Fed. Cir. 1984).

The claims are, therefore, believed to overcome this objection raised by the Examiner.

In the Action at page 6, paragraph 9, the Examiner has also questioned how the single claim can provide two different characteristics in the coating. This is clarified in new Claim 39, which defines two separate classes of tools (the at least one first one of the tools and the at least one second one of the tools) with a different characteristic for the coating being associated with each of these classes. Each class, of course, can contain as little as a single tool, but this requires the claim to define at least two tools, one in each class.

With regard to the Examiner's objections to Claims 27 (Office Action at page 7, paragraphs 11 and 12), new Claim 47 has been drafted to make it clear that the two different types of tools discussed are those referred to respectively as the first and second one of the tools, having the different adhesion-to-hardness characteristics that are best suited to the two different types of tools which, in turn, experience different service conditions.

The remaining formal objections are respectfully traversed in that several of the objectionable claims have no counterpart of the newly presented claims.

In the Action at page 9, line 17, the Examiner has rejected most of the formerly presented claims as being fully anticipated by the U.S. Patent 5,272,014 to Leyendecker, et al, while at page 14, paragraph 21, the additional claims are rejected as being obvious from this reference.

The Examiner has also rejected various dependent claims as being obvious from a combination of the Leyendecker, et al patent in view of the secondary and tertiary references.

Leyendecker, et al has absolutely no teaching to the person having ordinary skill in this field as to which type of tool should be treated in which way with a view toward maximizing that tool's life and usefulness for a particular type of service condition. There is certainly no teaching that the skilled artisan should look at the adhesive/hardness attributes of a hard material layer and maximize one or the other depending on whether a high speed small area cutting or a low speed broad area cutting is to be performed by the tool. There is even less teaching that this adjustment of relative amounts of each attribute (adhesiveness on the one hand and hardness on the other) can be changed by either changing the concentration of one element to the other or keeping the concentration the same between the active edge area of the tool and other points on the tool.

Claim 39 provides a method for producing at least two tools, one of each type, and explains how the coating is optimized for the relative amount of adhesiveness and hardness for each tool type. There is nothing like this taught by Leyendecker, et al and certainly the second and tertiary references add noting to Leyendecker, et al in this direction.

The dependent claims define other features of the invention which distinguish it even further from the prior art.

The Examiner is respectfully requested to telephone the undersigned for the purpose of scheduling a telephone interview to discuss this case.

Since the undersigned cannot predict when the Examiner will have had an opportunity to consider this amendment and thus, cannot tell when an appropriate call should be made to the Examiner for scheduling such an interview, the Examiner is urged to initiate such a call when he has had an opportunity to review these comments and reconsider this case. It is respectfully requested that such a call be made so that the undersigned can discuss this case with the Examiner before a possibly final action is issued in this case.

Respectfully submitted,



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Dated: 4/14/02

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PCM:al
Encs.

Exhibit A

Sn 09/52-746
Ex. W.D. Markham
Au. 1702
Ad. HCO-0760j

Spectrum 4
WSP 501 : Edge

Fig. 2

